

ABSTRACT

A data overlay is described which is built as a data structure on top of a logical space defined by a distributed hash table (DHT) in a peer-to-peer (P2P) network environment. The data overlay can assume a topology of a tree having a plurality of tree nodes. Each of the tree nodes has a zone allocated to it that maps to a corresponding zone associated with a DHT node in the logical space of the DHT. Procedures are described for “growing” this tree structure, such that the tree structure is self-organizing and self-healing on the same scale as the underlying DHT. Other procedures are described for using the tree structure to gather information from the DHT nodes and to disseminate information to the DHT nodes.